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Animal Recognition Application Using Kohonen Feature Map

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Thesis submitted in fulfillment of the requirements for
Bachelor of Science (Hons) Intelligent System
Faculty of Information Technology And
Quantitative Science

MAY 2007

DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline

MAY 29, 2007

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ABSTRACT

Underwater world had always been full of mystery in view of the fact that it was filled with unaccountably many species. Among the living organisms, fish are the most familiar to humans in environment, commercial and even recreational. From this perspective, fish recognition arouses interest of not only dedicated underwater scientists but also of ordinary people who may be interested in this matter. Roughly 1.4 million species are known to science. Beyond this estimation, most unrecognized species are in poorly studied groups where it habitats were seldom explored. The job of discovering new species falls on the area of biology called taxonomy. The World-Wide Web is being used to collect data used by taxonomists' for instance taxonomic literature and specimen databases in different parts of the globe, archived as digital images. This scenario had shown us that there is a need for an animal recognition tool that supports efficient searching and navigating through large image databases of specimens. In this research, a prototype of animal recognition application using Kohonen Feature Map was introduced. The system has a learning component that able to classify fish species based on the local visual feature of its representative image. This research also reveals Kohonen Feature Map as a promising tool for image classification. Realized that there is millions of species around the globe, this research focused on fish species that was common in Malaysia. 20 species were studied in this research. The image database used in the research was composed of 100 color images

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